

On page 9, line 2, after "corresponding" insert --discrete--;

Line 5, after "the" insert --discrete--.

In the Claims:

Please cancel claims 1-4 and insert claims 5-9 as follows:

--5. (New) A method for determining and controlling the material flow of continuous-cast slabs in a continuous casting installation by monitoring and optimizing the temperature on the transport path of the continuous-cast slabs between the continuous-casting installation and a rolling mill, said method comprising the steps of :

- a. determining a temperature of the liquid phase of the continuous-cast slab at a mold exit of the continuous-casting installation and physical parameters of the continuous-cast slab;
- b. determining an amount of heat and a temperature profile of the continuous-cast slab by calculating the convective mixing of the amount of heat contained in the continuous-cast slab and the time-dependent heat loss from the inhomogeneously cooling of the continuous-cast slab, wherein the step of calculating comprises using a mathematical-physical model; and
- c. controlling the material flow in the continuous-casting installation via a slab-monitoring system of the continuous-casting installation and using the amount of heat and the temperature profile determined in said step b. as an input to the slab-monitoring system.--

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B1

--6. (New) The method of claim 1, wherein in said step b., the substep of calculating comprises using one of a two-dimensional finite element method, a finite difference method, and software using formulas derived from off-line studies to calculate the mathematical-physical model.--

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--7. (New) The method of claim 1, wherein said step of determining the physical parameters of the continuous-cast slab comprises determining temperature-dependent material values comprising at least one of density ρ , specific C_p , thermal conductivity λ , and scale properties.--

--8. (New) The method of claim 1, wherein said step a. further comprises determining a surface temperature of the continuous-cast slab, said step c. comprises using a surface temperature of the continuous-cast slab determined in said step a. as an input to the slab monitoring system, and said step c. further comprises automatically controlling the material flow via the slab monitoring system based on the amount of heat and the temperature profile determined in said step b. and the surface temperature of the continuous-cast slab.--

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--9. (New) The method of claim 1, wherein said step a. further comprises determining a surface temperature of the continuous-cast slab and said step c. further comprises using the surface temperature of the continuous cast slab measured in said step a. as an input to the slab monitoring system.--